

**In the Claims**

1. **(original):** A method of curing a composition comprising

- (a) at least one free-radical-polymerisable compound or
- (b) at least one compound that, under the action of an acid, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or
- (c) at least one compound that, under the action of a base, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or
- a mixture of components (a) and (b), or
- a mixture of components (a) and (c); and
- (d) at least one photolabile compound that is activatable by plasma discharge;

wherein

the composition is applied to a three-dimensional substrate and  
the curing is carried out in a plasma discharge chamber.

2. **(original):** A method of curing a composition comprising

- (a) at least one free-radical-polymerisable compound or
- at least one compound that, under the action of an acid, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or
- (c) at least one compound that, under the action of a base, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or
- a mixture of components (a) and (b), or
- a mixture of components (a) and (c);
- (d) at least one photolabile compound that is activatable by plasma discharge; and
- (e) at least one light stabiliser compound or UV absorber compound;

wherein

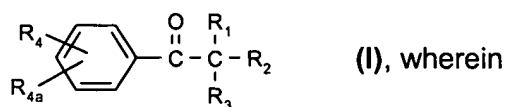
the curing is carried out in a plasma discharge chamber.

3. **(currently amended):** A method according to ~~either claim 1 or claim 2~~, wherein component (d) in the composition is selected from the group consisting of a free-radical photoinitiator, a photolabile acid and ~~or~~ a photolabile base.

4. **(currently amended):** A method according to ~~either claim 1 or claim 2~~, wherein component (d) in the composition is at least one compound selected from the group consisting of benzophenones,

benzophenone derivatives, acetophenone, acetophenone derivatives, halomethylbenzophenones, halomethylarylsulfones, dialkoxyacetophenones, anthracene, anthracene derivatives, thioxanthone, thioxanthone derivatives, 3-ketocoumarin, 3-ketocoumarin derivatives, anthraquinone, anthraquinone derivatives,  $\alpha$ -hydroxy- or  $\alpha$ -amino-acetophenone derivatives,  $\alpha$ -sulfonylacetophenone derivatives, 4-aryol-1,3-dioxolanes, benzoin alkyl ethers and benzilketals, phenyl glyoxalates and derivatives thereof, dimeric phenyl glyoxalates, peresters, monoacylphosphine oxides, bisacylphosphine oxides, trisacylphosphine oxides, halomethyltriazines, titanocenes, borate compounds, O-acyloxime compounds, camphorquinone derivatives, iodonium salts, sulfonium salts, iron aryl complexes, oximesulfonic acid esters and photolabile amines.

5. (**currently amended**): A method according to either claim 1 or claim 2, wherein component (d) in the composition is at least one compound selected from the group consisting of formula I, II, III or IV and IV



**R<sub>1</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkoxy;

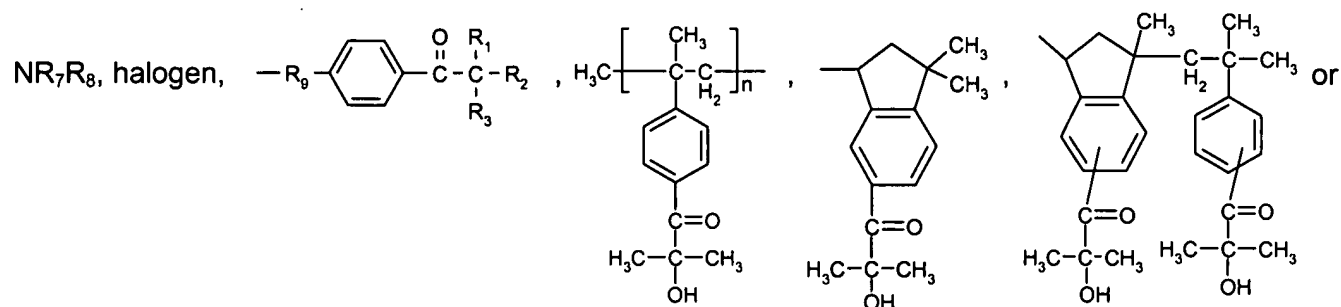
**R<sub>2</sub>** is phenyl, OR<sub>5</sub> or NR<sub>7</sub>R<sub>8</sub>;

**R<sub>3</sub>** has one of the definitions given for R<sub>1</sub> or is C<sub>3</sub>-C<sub>12</sub>alkenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>1</sub>-C<sub>6</sub>alkyl-phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl;

or R<sub>1</sub> and R<sub>3</sub>, together with the carbon atom to which they are bonded, form a cyclohexyl ring;

R<sub>2</sub> being phenyl when R<sub>1</sub> and R<sub>3</sub> are both alkoxy;

**R<sub>4</sub>** and **R<sub>4a</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl, OR<sub>5</sub>, SR<sub>6</sub>,



a monovalent linear or branched siloxane radical;

**n** is a number from 1 to 10;

**R<sub>5</sub>** and **R<sub>6</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkenyl, phenyl, benzyl, Si(CH<sub>3</sub>)<sub>3</sub> or -[C<sub>a</sub>H<sub>2a</sub>X]<sub>b</sub>-R<sub>10</sub>;

**R<sub>7</sub>** and **R<sub>8</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl, or **R<sub>7</sub>** and **R<sub>8</sub>**, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or a NR<sub>11</sub> group;

**R<sub>9</sub>** is a single bond, O, S, NR<sub>11</sub>, -CH<sub>2</sub>CH<sub>2</sub>- or  $\begin{array}{c} \text{R}_{12} \\ | \\ \text{---C---} \\ | \\ \text{R}_{13} \end{array}$  ;

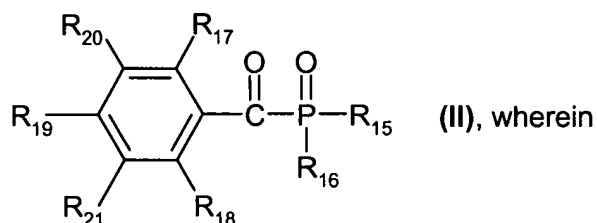
**a** and **b** are each independently of the other a number from 1 to 12;

**X** is S, O or NR<sub>11</sub>;

**R<sub>10</sub>** is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or  $\begin{array}{c} \text{O} \quad \text{R}_{12} \quad \text{R}_{13} \\ || \quad | \quad | \\ \text{---C---C=C---} \\ \quad \quad \quad | \\ \quad \quad \quad \text{R}_{14} \end{array}$  ;

**R<sub>11</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl; and

**R<sub>12</sub>**, **R<sub>13</sub>** and **R<sub>14</sub>** are each independently of the others hydrogen or methyl;



**R<sub>15</sub>** and **R<sub>16</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy; phenyl which is unsubstituted or substituted by one or more OR<sub>22</sub>, SR<sub>23</sub>, NR<sub>24</sub>R<sub>25</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl or halogen substituents;

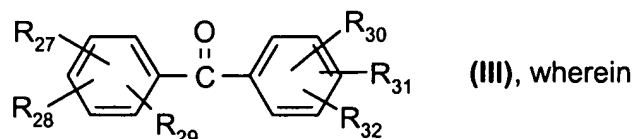
or **R<sub>15</sub>** and **R<sub>16</sub>** are biphenyl, naphthyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl or  $\begin{array}{c} \text{R}_{18} \quad \text{R}_{21} \\ | \quad | \\ \text{---C---} \\ | \quad | \\ \text{R}_{17} \quad \text{R}_{20} \end{array}$  ;

**R<sub>17</sub>** and **R<sub>18</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

**R<sub>19</sub>**, **R<sub>20</sub>** and **R<sub>21</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

**R<sub>22</sub>**, **R<sub>23</sub>**, **R<sub>24</sub>** and **R<sub>25</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl, benzyl, or C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms and is unsubstituted or substituted by OH or/and SH; or **R<sub>24</sub>** and **R<sub>25</sub>**, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O or S atoms or an NR<sub>26</sub> group; and

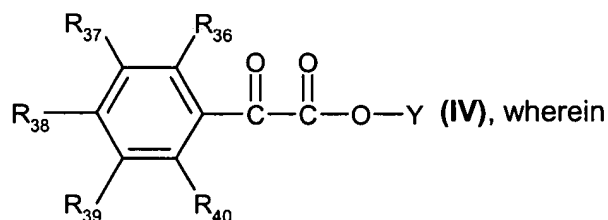
**R<sub>26</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;



**R<sub>27</sub>, R<sub>28</sub>, R<sub>29</sub>, R<sub>30</sub>, R<sub>31</sub> and R<sub>32</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl, naphthyl, -OR<sub>35</sub>, -SR<sub>35</sub>, -(CO)O(C<sub>1</sub>-C<sub>4</sub>alkyl), halogen, NR<sub>33</sub>R<sub>34</sub> or a monovalent linear or branched siloxane radical, or R<sub>29</sub> and R<sub>30</sub>, each in the o-position to the carbonyl group, together form a S atom; and

**R<sub>33</sub> and R<sub>34</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl, or R<sub>33</sub> and R<sub>34</sub>, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or a NR<sub>11</sub> group; and

**R<sub>35</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl or phenyl;



**R<sub>36</sub>, R<sub>37</sub>, R<sub>38</sub>, R<sub>39</sub> and R<sub>40</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, naphthyl, halogen, CN and/or by -OCOR<sub>41</sub>, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or R<sub>36</sub>, R<sub>37</sub>, R<sub>38</sub>, R<sub>39</sub> and R<sub>40</sub> are OR<sub>42</sub>, SR<sub>43</sub>, NR<sub>44</sub>R<sub>45</sub>, halogen, a monovalent linear or branched siloxane radical, or phenyl unsubstituted or substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl or/and one or two C<sub>1</sub>-C<sub>4</sub>alkoxy substituents, it being possible for the substituents OR<sub>42</sub>, SR<sub>43</sub>, NR<sub>44</sub>R<sub>45</sub> to form 5- or 6-membered rings by way of the radicals R<sub>42</sub>, R<sub>43</sub>, R<sub>44</sub> and/or R<sub>45</sub> with further substituents on the phenyl ring or with one of the carbon atoms of the phenyl ring;


**R<sub>41</sub>** is C<sub>1</sub>-C<sub>8</sub>alkyl, or phenyl unsubstituted or substituted by from one to three C<sub>1</sub>-C<sub>4</sub>alkyl and/or one to three C<sub>1</sub>-C<sub>4</sub>alkoxy substituents;

**R<sub>42</sub> and R<sub>43</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, phenoxy or/and by -OCOR<sub>41</sub>, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or R<sub>42</sub> and R<sub>43</sub> are phenyl unsubstituted or substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl or/and by C<sub>1</sub>-C<sub>4</sub>alkyl, or R<sub>42</sub> and R<sub>43</sub> are C<sub>3</sub>-C<sub>6</sub>alkenyl, cyclopentyl, cyclohexyl or naphthyl;

**R<sub>44</sub> and R<sub>45</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy or/and by phenyl, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or R<sub>44</sub> and R<sub>45</sub> are phenyl, -COR<sub>41</sub> or SO<sub>2</sub>R<sub>46</sub>, or R<sub>44</sub> and R<sub>45</sub>, together with the nitrogen atom to which they are bonded, form a 5-, 6- or 7-membered ring, which may also be interrupted by -O- or -NR<sub>47</sub>-;

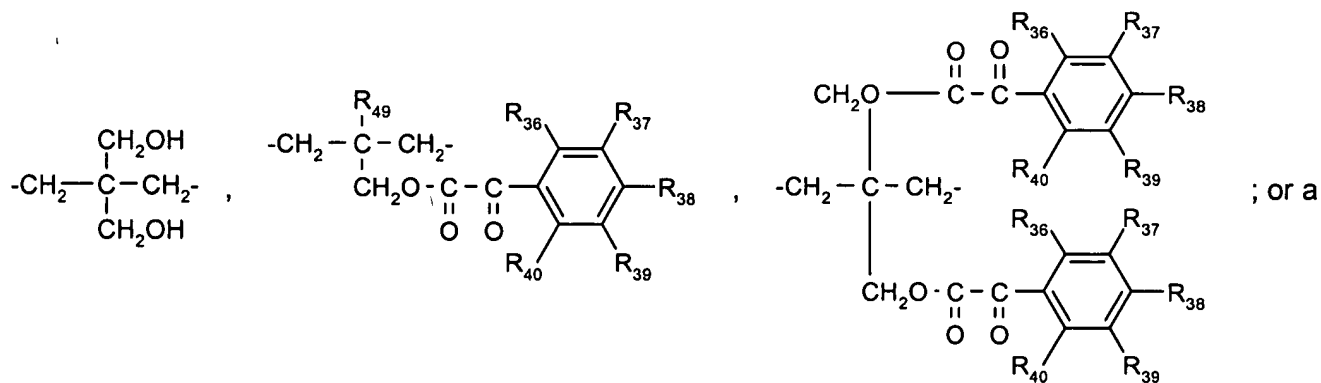
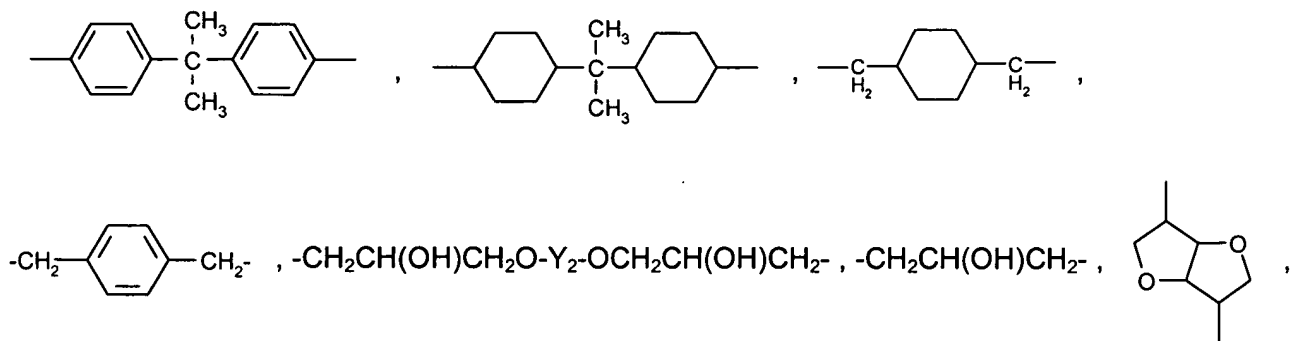
**R<sub>46</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl or 4-methylphenyl;

**R<sub>47</sub>** is hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl unsubstituted or substituted by OH or by C<sub>1</sub>-C<sub>4</sub>alkoxy, or is phenyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkyl or by C<sub>1</sub>-C<sub>4</sub>alkoxy;

**Y** is  $\text{—Y}_1\text{—O—C(=O)—C(=O)—}$  ,  $\text{C}_1\text{—C}_{20}$ alkyl, phenyl, naphthyl, phenyl- $\text{C}_1\text{—C}_4$ alkyl or a

monovalent linear or branched siloxane radical:

**Y<sub>1</sub>** is C<sub>1</sub>-C<sub>12</sub>alkylene, C<sub>4</sub>-C<sub>8</sub>alkenylene, C<sub>4</sub>-C<sub>8</sub>alkynylene, cyclohexylene, C<sub>4</sub>-C<sub>40</sub>alkylene interrupted by one or more -O-, -S- or -NR<sub>48</sub>-, or is phenylene or Y<sub>1</sub> is a group



divalent linear or branched siloxane radical;

**Y<sub>2</sub>** has the same definitions as Y<sub>1</sub> with the exception of the formula

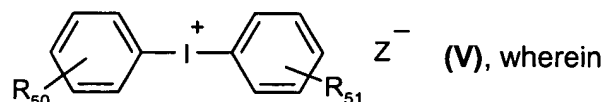
$$-\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{O}-\text{Y}_2-\text{OCH}_2\text{CH}(\text{OH})\text{CH}_2-$$

**R<sub>48</sub>** is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or phenyl; and

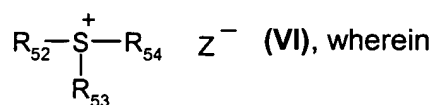
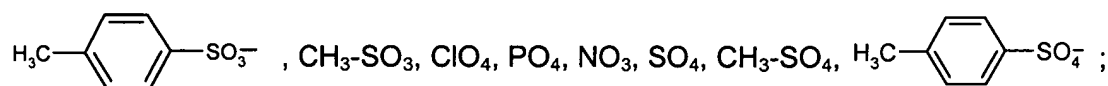
**R<sub>49</sub>** is hydrogen, CH<sub>2</sub>OH or C<sub>1</sub>-C<sub>4</sub>alkyl.

6. **(currently amended)**: A method according to claim 5 [[4]], wherein component (d) in the composition is at least one compound selected from the group consisting of formula I ~~or~~ and II [[.]] ~~especially a mixture of a compound of formula I and a compound of formula II.~~

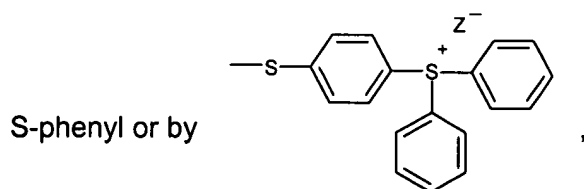
7. **(currently amended)**: A method according to ~~either~~ claim 1 ~~or claim 2~~, wherein component (d) in the composition is at least one compound selected from the group consisting of formula V, VI, VII ~~or~~ and VIIa



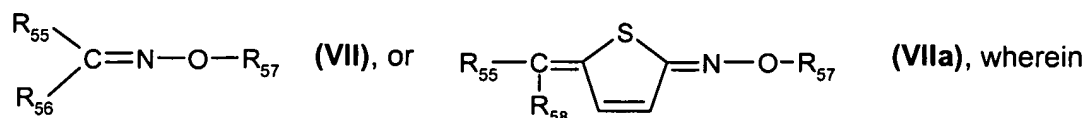
**R<sub>50</sub>** and **R<sub>51</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>20</sub>alkyl, C<sub>1</sub>-C<sub>20</sub>alkoxy, OH-substituted C<sub>1</sub>-C<sub>20</sub>alkoxy, halogen, C<sub>2</sub>-C<sub>12</sub>alkenyl, cycloalkyl, especially methyl, isopropyl or isobutyl; and **Z** is an anion, especially PF<sub>6</sub>, SbF<sub>6</sub>, AsF<sub>6</sub>, BF<sub>4</sub>, (C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>B, Cl, Br, HSO<sub>4</sub>, CF<sub>3</sub>-SO<sub>3</sub>, F-SO<sub>3</sub>,



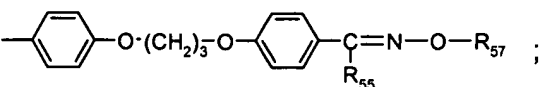
**R<sub>52</sub>**, **R<sub>53</sub>** and **R<sub>54</sub>** are each independently of the others unsubstituted phenyl, or phenyl substituted by –



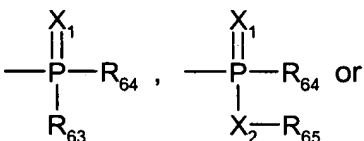
**Z** is as defined above;

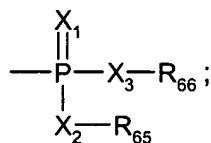


$R_{55}$  is  $\left[ \begin{array}{c} \text{O} \\ \parallel \\ -\text{C}- \\ \parallel \end{array} \right]_q R_{58}$ , (CO)O-C<sub>1</sub>-C<sub>4</sub>alkyl, CN or C<sub>1</sub>-C<sub>12</sub>haloalkyl;

$R_{56}$  has one of the definitions given for  $R_{55}$  or is  ;

$R_{57}$  is C<sub>1</sub>-C<sub>18</sub>alkylsulfonyl, C<sub>1</sub>-C<sub>10</sub>haloalkylsulfonyl, camphorylsulfonyl, phenyl-C<sub>1</sub>-C<sub>3</sub>alkylsulfonyl, C<sub>3</sub>-C<sub>30</sub>cycloalkylsulfonyl, phenylsulfonyl, naphthylsulfonyl, anthracylsulfonyl or phenanthrylsulfonyl, ~~the groups cycloalkyl, phenyl, naphthyl, anthracyl and phenanthryl of the radicals C<sub>3</sub>-C<sub>30</sub>cycloalkylsulfonyl, phenyl-C<sub>1</sub>-C<sub>3</sub>alkylsulfonyl, phenylsulfonyl, naphthylsulfonyl, anthracylsulfonyl and phenanthrylsulfonyl being~~ unsubstituted or substituted by one or more halogen, C<sub>1</sub>-C<sub>4</sub>haloalkyl, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>16</sub>alkyl, phenyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenoxy, C<sub>1</sub>-C<sub>4</sub>alkyl-O(CO)-, C<sub>1</sub>-C<sub>4</sub>alkyl-(CO)O-, R<sub>67</sub>OSO<sub>2</sub>- and/or

-NR<sub>60</sub>R<sub>61</sub> substituents; or  $R_{57}$  is C<sub>2</sub>-C<sub>6</sub>haloalkanoyl, halobenzoyl,  or



$X_1$ ,  $X_2$  and  $X_3$  are each independently of the others O or S;

$q$  is 0 or 2; and

$R_{58}$  is C<sub>1</sub>-C<sub>12</sub>alkyl, cyclohexyl, camphoryl, unsubstituted phenyl, or phenyl substituted by one or more halogen, C<sub>1</sub>-C<sub>12</sub>alkyl, OR<sub>59</sub>, SR<sub>59</sub> or NR<sub>60</sub>R<sub>61</sub> substituents;

$R_{59}$  is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;

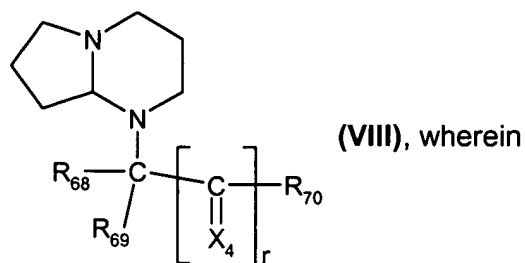
$R_{60}$  and  $R_{61}$  are each independently of the other hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl, or  $R_{60}$  and  $R_{61}$ , together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or an NR<sub>62</sub> group;

$R_{62}$  is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl;

$R_{63}$ ,  $R_{64}$ ,  $R_{65}$  and  $R_{66}$  are each independently of the others C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl; or phenyl unsubstituted or substituted by C<sub>1</sub>-C<sub>4</sub>alkyl or by halogen; and

$R_{67}$  is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl or tolyl.

8. **(currently amended):** A method according to ~~either claim 1 or claim 2~~, wherein component (d) in the composition is at least one compound selected from the group consisting of formula VIII



**r** is 0 or 1;

**X<sub>4</sub>** is CH<sub>2</sub> or O;

**R<sub>68</sub>** and **R<sub>69</sub>** are each independently of the other hydrogen or C<sub>1</sub>-C<sub>20</sub>alkyl; and

**R<sub>70</sub>** is unsubstituted or C<sub>1</sub>-C<sub>12</sub>alkyl- or C<sub>1</sub>-C<sub>12</sub>alkoxy-substituted phenyl, naphthyl or biphenyl.

9. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition comprises, in addition to the photolabile component (d), other additives (h), sensitizer compounds (f) or/and dyes or pigments (g).

10. **(original)**: A method according to claim 1, wherein the composition comprises at least one light stabiliser or/and at least one UV absorber compound.

11. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition is a surface coating.

12. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition is a printing ink.

13. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition comprises as polymerisable component solely free-radical-polymerisable compounds (a).

14. **(currently amended)**: A method according to claim 13, wherein the free-radical-polymerisable compound comprises at least one compound selected from the group consisting of mono-, di-, tri- or tetra-functional acrylate monomers and/or at least one mono-, di-, tri- or tetra-functional acrylate-functional oligomers.

15. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition comprises as polymerisable component solely cationically polymerisable or crosslinkable compounds (b).

16. **(currently amended)**: A method according to ~~either claim 1 or claim 2~~, wherein the composition comprises as polymerisable component a mixture of at least one free-radical-polymerisable compound (a) and at least one cationically polymerisable compound (b).

17. **(currently amended)**: A coated substrate which is coated on at least one surface by means of the method according to ~~either claim 1 or claim 2~~.

18. **(currently amended)**: A coating obtainable by a method according to ~~either claim 1 or claim 2~~.

19. **(currently amended)**: A method of curing a composition comprising

(1) a combination of at least one electron acceptor compound, ~~especially a maleimide compound~~, and at least one electron donor compound, ~~especially a vinyl ether compound~~; and

(2) optionally at least one free-radical-polymerisable compound (a),  
wherein the curing is carried out in a plasma discharge chamber.

20. **(currently amended)**: A method of curing a composition comprising

(a) at least one free-radical-polymerisable component having at least one ethylenically unsaturated double bond, the free-radical-polymerisable component optionally additionally being functionalised with OH, NH<sub>2</sub>, COOH, epoxy or NCO groups; and

(a1) a mixture of at least one compound selected from the group consisting of polyacrylates or  
and polyester polyols,

and at least one compound selected from the group consisting of ~~in combination with melamine, or with a melamine derivatives, or in combination with a~~ and blocked or non-blocked polyisocyanates;

or

(a2) a mixture of at least one compound selected from the group consisting of carboxyl-, anhydride- or amino-functional polyesters or ~~and at least one carboxyl-, anhydride- or amino-functional polyacrylates,~~

and at least one compound selected from the group consisting of ~~in combination with an epoxy-functional polyesters or~~ and polyacrylates;

or

(a3) a mixture of (a1) and (a2); and

(d) at least one photolabile compound that is activatable by plasma discharge;

wherein

the curing of the composition is carried out in a plasma discharge chamber and, optionally, thermal pre- or after-treatment is carried out.

21. **(original)**: A method of producing mouldings from composite materials, wherein a support is impregnated with a composition comprising

(a) at least one free-radical-polymerisable compound or

(b) at least one compound that, under the action of an acid, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or

(c) at least one compound that, under the action of a base, is able to enter into a polymerisation, polycondensation or polyaddition reaction, or

a mixture of components (a) and (b), or

a mixture of components (a) and (c); and

(d) at least one photolabile compound that is activatable by plasma discharge;

and is introduced into a mould;

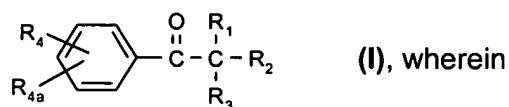
wherein the curing is carried out in a plasma discharge chamber and, optionally, thermal aftertreatment is carried out.

22. **(new)**: A method according to claim 2, wherein component (d) in the composition is selected from the group consisting of a free-radical photoinitiator, a photolabile acid or a photolabile base.

23. **(new)**: A method according to claim 2, wherein component (d) in the composition is at least one compound selected from the group consisting of benzophenones, benzophenone derivatives, acetophenone, acetophenone derivatives, halomethylbenzophenones, halomethylarylsulfones, dialkoxyacetophenones, anthracene, anthracene derivatives, thioxanthone, thioxanthone derivatives, 3-ketocoumarin, 3-ketocoumarin derivatives, anthraquinone, anthraquinone derivatives,  $\alpha$ -hydroxy- or  $\alpha$ -amino-acetophenone derivatives,  $\alpha$ -sulfonylacetophenone derivatives, 4-aryloxy-1,3-dioxolanes, benzoin alkyl ethers and benzilketals, phenyl glyoxalates and derivatives thereof, dimeric phenyl glyoxalates, peresters, monoacylphosphine oxides, bisacylphosphine oxides, trisacylphosphine oxides, halomethyltriazines, titanocenes, borate compounds, O-acyloxime compounds,

camphorquinone derivatives, iodonium salts, sulfonium salts, iron aryl complexes, oximesulfonic acid esters and photolabile amines.

24. (new): A method according to claim 2, wherein component (d) in the composition is at least one compound selected from the group consisting of formula I, II, III or/and IV



**R<sub>1</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>alkoxy;

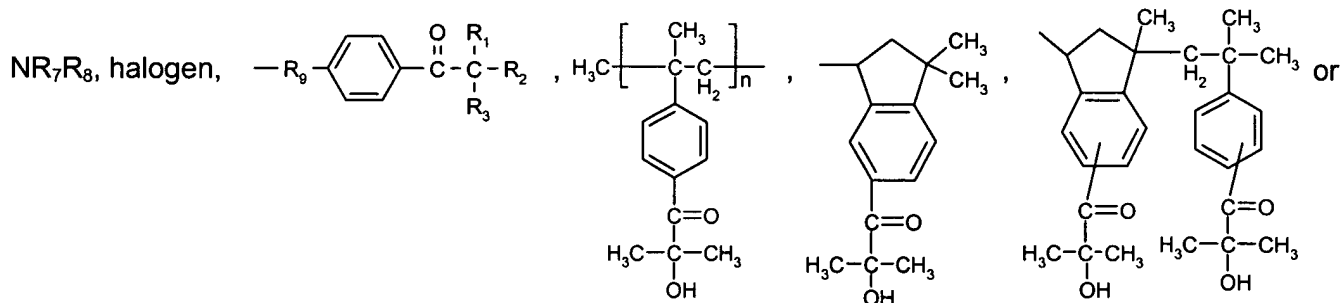
**R<sub>2</sub>** is phenyl, OR<sub>5</sub> or NR<sub>7</sub>R<sub>8</sub>;

**R<sub>3</sub>** has one of the definitions given for R<sub>1</sub> or is C<sub>3</sub>-C<sub>12</sub>alkenyl, phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl or C<sub>1</sub>-C<sub>6</sub>alkyl-phenyl-C<sub>1</sub>-C<sub>6</sub>alkyl;

or R<sub>1</sub> and R<sub>3</sub>, together with the carbon atom to which they are bonded, form a cyclohexyl ring;

R<sub>2</sub> being phenyl when R<sub>1</sub> and R<sub>3</sub> are both alkoxy;

**R<sub>4</sub>** and **R<sub>4a</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl, OR<sub>5</sub>, SR<sub>6</sub>,

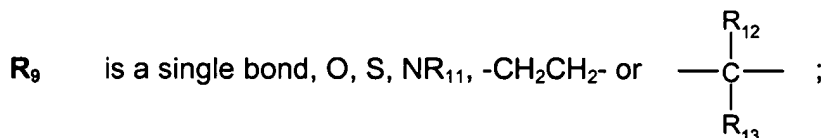


a monovalent linear or branched siloxane radical;

**n** is a number from 1 to 10;

**R<sub>5</sub>** and **R<sub>6</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkenyl, phenyl, benzyl, Si(CH<sub>3</sub>)<sub>3</sub> or  $-\text{[C}_a\text{H}_{2a}\text{X]}_b-\text{R}_{10}$ ;

**R<sub>7</sub>** and **R<sub>8</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl, or R<sub>7</sub> and R<sub>8</sub>, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or a NR<sub>11</sub> group;



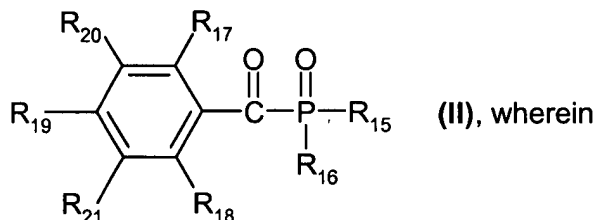
**a** and **b** are each independently of the other a number from 1 to 12;

**X** is S, O or NR<sub>11</sub>;

**R<sub>10</sub>** is hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl or  $\text{---}\overset{\text{O}}{\parallel}\text{C}\text{---}\overset{\text{R}_{12}}{\text{C}}=\overset{\text{R}_{13}}{\text{C}}\text{---R}_{14}$ ;

**R<sub>11</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl; and

**R<sub>12</sub>, R<sub>13</sub> and R<sub>14</sub>** are each independently of the others hydrogen or methyl;



**R<sub>15</sub> and R<sub>16</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy; phenyl which is unsubstituted or substituted by one or more OR<sub>22</sub>, SR<sub>23</sub>, NR<sub>24</sub>R<sub>25</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl or halogen substituents;

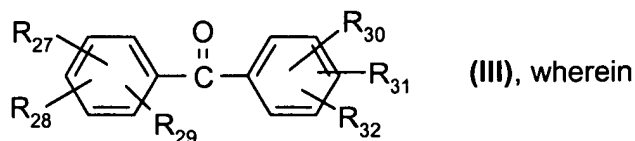
or **R<sub>15</sub> and R<sub>16</sub>** are biphenyl, naphthyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl or  $\text{---}\overset{\text{O}}{\parallel}\text{C}\text{---}$  ;

**R<sub>17</sub> and R<sub>18</sub>** are each independently of the other C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

**R<sub>19</sub>, R<sub>20</sub> and R<sub>21</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, CF<sub>3</sub> or halogen;

**R<sub>22</sub>, R<sub>23</sub>, R<sub>24</sub> and R<sub>25</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, C<sub>3</sub>-C<sub>8</sub>cycloalkyl, phenyl, benzyl, or C<sub>2</sub>-C<sub>20</sub>alkyl which is interrupted by O atoms and is unsubstituted or substituted by OH or/and SH; or **R<sub>24</sub> and R<sub>25</sub>**, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O or S atoms or an NR<sub>26</sub> group; and

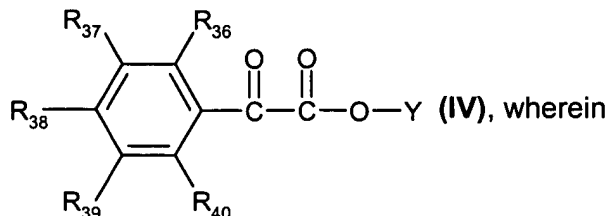
**R<sub>26</sub>** is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkoxy, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;



**R<sub>27</sub>, R<sub>28</sub>, R<sub>29</sub>, R<sub>30</sub>, R<sub>31</sub> and R<sub>32</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl, naphthyl, -OR<sub>35</sub>, -SR<sub>35</sub>, -(CO)O(C<sub>1</sub>-C<sub>4</sub>alkyl), halogen, NR<sub>33</sub>R<sub>34</sub> or a monovalent linear or branched siloxane radical, or **R<sub>29</sub> and R<sub>30</sub>**, each in the o-position to the carbonyl group, together form a S atom; and

**R<sub>33</sub>** and **R<sub>34</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl, or **R<sub>33</sub>** and **R<sub>34</sub>**, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or a NR<sub>11</sub> group; and

**R<sub>35</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl or phenyl;



**R<sub>36</sub>**, **R<sub>37</sub>**, **R<sub>38</sub>**, **R<sub>39</sub>** and **R<sub>40</sub>** are each independently of the others hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, naphthyl, halogen, CN and/or by -OCOR<sub>41</sub>, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or **R<sub>36</sub>**, **R<sub>37</sub>**, **R<sub>38</sub>**, **R<sub>39</sub>** and **R<sub>40</sub>** are OR<sub>42</sub>, SR<sub>43</sub>, NR<sub>44</sub>R<sub>45</sub>, halogen, a monovalent linear or branched siloxane radical, or phenyl unsubstituted or substituted by one or two C<sub>1</sub>-C<sub>4</sub>alkyl or/and one or two C<sub>1</sub>-C<sub>4</sub>alkoxy substituents, it being possible for the substituents OR<sub>42</sub>, SR<sub>43</sub>, NR<sub>44</sub>R<sub>45</sub> to form 5- or 6-membered rings by way of the radicals R<sub>42</sub>, R<sub>43</sub>, R<sub>44</sub> and/or R<sub>45</sub> with further substituents on the phenyl ring or with one of the carbon atoms of the phenyl ring;

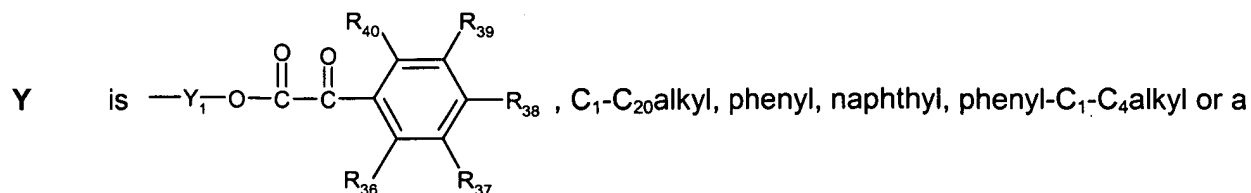
**R<sub>41</sub>** is C<sub>1</sub>-C<sub>8</sub>alkyl, or phenyl unsubstituted or substituted by from one to three C<sub>1</sub>-C<sub>4</sub>alkyl and/or one to three C<sub>1</sub>-C<sub>4</sub>alkoxy substituents;

**R<sub>42</sub>** and **R<sub>43</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl, phenoxy or/and by -OCOR<sub>41</sub>, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or **R<sub>42</sub>** and **R<sub>43</sub>** are phenyl unsubstituted or substituted by C<sub>1</sub>-C<sub>4</sub>alkoxy, phenyl or/and by C<sub>1</sub>-C<sub>4</sub>alkyl, or **R<sub>42</sub>** and **R<sub>43</sub>** are C<sub>3</sub>-C<sub>6</sub>alkenyl, cyclopentyl, cyclohexyl or naphthyl;

**R<sub>44</sub>** and **R<sub>45</sub>** are each independently of the other hydrogen, C<sub>1</sub>-C<sub>12</sub>alkyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkoxy or/and by phenyl, or C<sub>2</sub>-C<sub>12</sub>alkyl which is interrupted by one or more O atoms, or **R<sub>44</sub>** and **R<sub>45</sub>** are phenyl, -COR<sub>41</sub> or SO<sub>2</sub>R<sub>46</sub>, or **R<sub>44</sub>** and **R<sub>45</sub>**, together with the nitrogen atom to which they are bonded, form a 5-, 6- or 7-membered ring, which may also be interrupted by -O- or -NR<sub>47</sub>-;

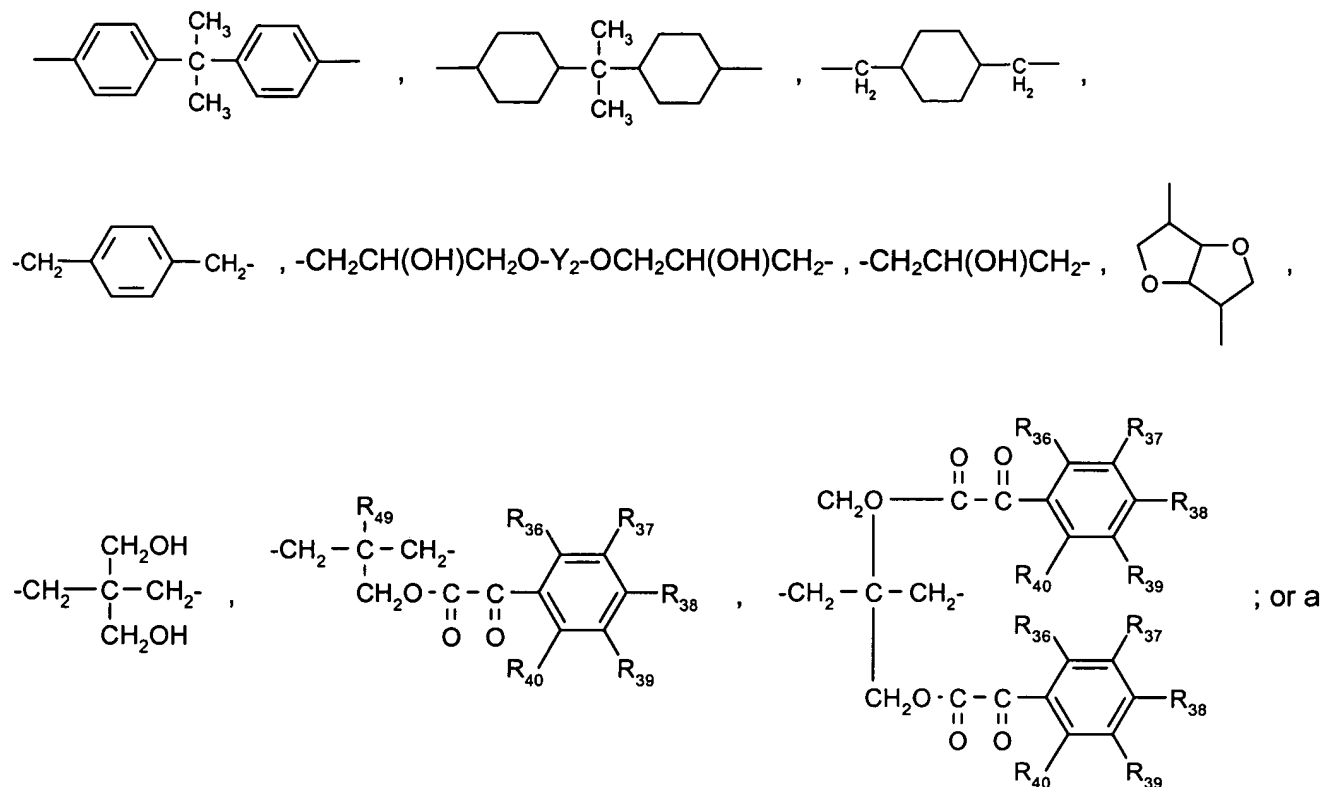
**R<sub>46</sub>** is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl or 4-methylphenyl;

**R<sub>47</sub>** is hydrogen, C<sub>1</sub>-C<sub>8</sub>alkyl unsubstituted or substituted by OH or by C<sub>1</sub>-C<sub>4</sub>alkoxy, or is phenyl unsubstituted or substituted by OH, C<sub>1</sub>-C<sub>4</sub>alkyl or by C<sub>1</sub>-C<sub>4</sub>alkoxy;



monovalent linear or branched siloxane radical;

$Y_1$  is  $C_1$ - $C_{12}$ alkylene,  $C_4$ - $C_8$ alkenylene,  $C_4$ - $C_8$ alkynylene, cyclohexylene,  $C_4$ - $C_{40}$ alkylene interrupted by one or more -O-, -S- or -NR<sub>48</sub>-, or is phenylene or  $Y_1$  is a group



divalent linear or branched siloxane radical;

$Y_2$  has the same definitions as  $Y_1$  with the exception of the formula

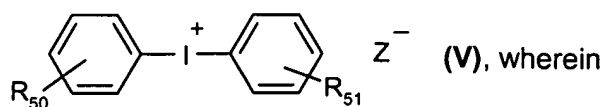
$-CH_2CH(OH)CH_2O-Y_2-OCH_2CH(OH)CH_2-$ ;

$R_{48}$  is hydrogen,  $C_1$ - $C_{12}$ alkyl or phenyl; and

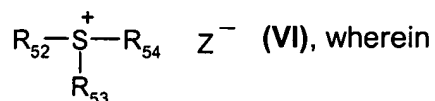
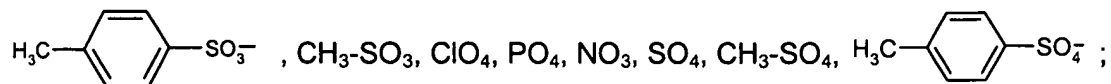
$R_{49}$  is hydrogen,  $CH_2OH$  or  $C_1$ - $C_4$ alkyl.

25. (new): A method according to claim 24, wherein component (d) in the composition is at least one compound selected from the group consisting of formula I or/and II.

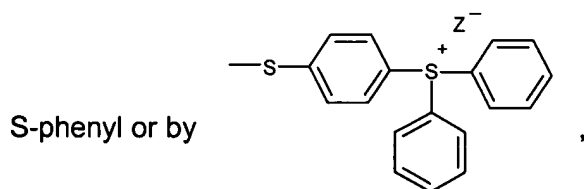
26. (new): A method according to claim 2, wherein component (d) in the composition is at least one compound selected from the group consisting of formula V, VI, VII and VIIa



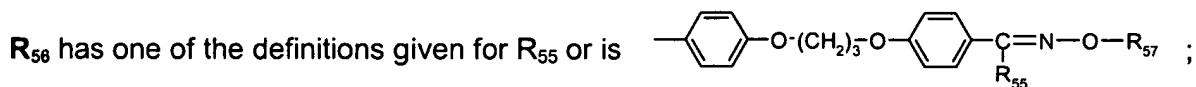
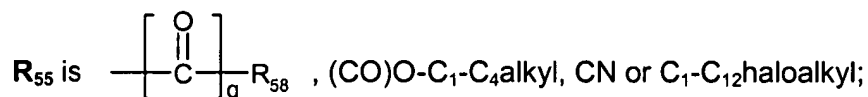
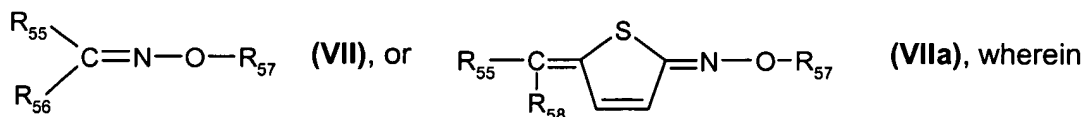
**R**<sub>50</sub> and **R**<sub>51</sub> are each independently of the other hydrogen, C<sub>1</sub>-C<sub>20</sub>alkyl, C<sub>1</sub>-C<sub>20</sub>alkoxy, OH-substituted C<sub>1</sub>-C<sub>20</sub>alkoxy, halogen, C<sub>2</sub>-C<sub>12</sub>alkenyl, cycloalkyl, especially methyl, isopropyl or isobutyl; and **Z** is an anion, especially PF<sub>6</sub>, SbF<sub>6</sub>, AsF<sub>6</sub>, BF<sub>4</sub>, (C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>B, Cl, Br, HSO<sub>4</sub>, CF<sub>3</sub>-SO<sub>3</sub>, F-SO<sub>3</sub>,



**R**<sub>52</sub>, **R**<sub>53</sub> and **R**<sub>54</sub> are each independently of the others unsubstituted phenyl, or phenyl substituted by –

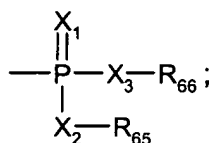


**Z** is as defined above;



**R**<sub>57</sub> is C<sub>1</sub>-C<sub>16</sub>alkylsulfonyl, C<sub>1</sub>-C<sub>10</sub>haloalkylsulfonyl, camphorylsulfonyl, phenyl-C<sub>1</sub>-C<sub>3</sub>alkylsulfonyl, C<sub>3</sub>-C<sub>30</sub>cycloalkylsulfonyl, phenylsulfonyl, naphthylsulfonyl, anthracylsulfonyl or phenanthrylsulfonyl, unsubstituted or substituted by one or more halogen, C<sub>1</sub>-C<sub>4</sub>haloalkyl, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>16</sub>alkyl, phenyl, C<sub>1</sub>-C<sub>4</sub>alkylthio, C<sub>1</sub>-C<sub>4</sub>alkoxy, phenoxy, C<sub>1</sub>-C<sub>4</sub>alkyl-O(CO)-, C<sub>1</sub>-C<sub>4</sub>alkyl-(CO)O-, R<sub>67</sub>OSO<sub>2</sub>- and/or

-NR<sub>60</sub>R<sub>61</sub> substituents; or R<sub>57</sub> is C<sub>2</sub>-C<sub>6</sub>haloalkanoyl, halobenzoyl,  $\begin{array}{c} \text{X}_1 \\ \parallel \\ \text{---P---R}_{64} \\ | \\ \text{R}_{63} \end{array}$ ,  $\begin{array}{c} \text{X}_1 \\ \parallel \\ \text{---P---R}_{64} \\ | \\ \text{X}_2\text{---R}_{65} \end{array}$  or



X<sub>1</sub>, X<sub>2</sub> and X<sub>3</sub> are each independently of the others O or S;

q is 0 or 2; and

R<sub>58</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, cyclohexyl, camphoryl, unsubstituted phenyl, or phenyl substituted by one or more halogen, C<sub>1</sub>-C<sub>12</sub>alkyl, OR<sub>59</sub>, SR<sub>59</sub> or NR<sub>60</sub>R<sub>61</sub> substituents;

R<sub>59</sub> is C<sub>1</sub>-C<sub>12</sub>alkyl, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>12</sub>hydroxyalkyl;

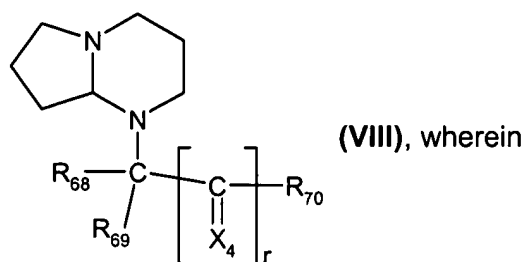
R<sub>60</sub> and R<sub>61</sub> are each independently of the other hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>6</sub>hydroxyalkyl, or R<sub>60</sub> and R<sub>61</sub>, together with the N atom to which they are bonded, form a 5- or 6-membered ring, which may also contain O atoms or an NR<sub>62</sub> group;

R<sub>62</sub> is hydrogen, phenyl, phenyl-C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl or C<sub>2</sub>-C<sub>5</sub>hydroxyalkyl;

R<sub>63</sub>, R<sub>64</sub>, R<sub>65</sub> and R<sub>66</sub> are each independently of the others C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>haloalkyl; or phenyl unsubstituted or substituted by C<sub>1</sub>-C<sub>4</sub>alkyl or by halogen; and

R<sub>67</sub> is hydrogen, C<sub>1</sub>-C<sub>4</sub>alkyl, phenyl or tolyl.

27. (new): A method according to claim 2, wherein component (d) in the composition is at least one compound selected from the group consisting of of formula VIII



r is 0 or 1;

X<sub>4</sub> is CH<sub>2</sub> or O;

R<sub>68</sub> and R<sub>69</sub> are each independently of the other hydrogen or C<sub>1</sub>-C<sub>20</sub>alkyl; and

R<sub>70</sub> is unsubstituted or C<sub>1</sub>-C<sub>12</sub>alkyl- or C<sub>1</sub>-C<sub>12</sub>alkoxy-substituted phenyl, naphthyl or biphenyl.

28. **(new)**: A method according to claim 2, wherein the composition comprises, in addition to the photolabile component (d), other additives (h), sensitizer compounds (f) or/and dyes or pigments (g).

29. **(new)**: A method according to claim 2, wherein the composition is a surface coating.

30. **(new)**: A method according to claim 2, wherein the composition is a printing ink.

31. **(new)**: A method according to either claim 2, wherein the composition comprises as polymerizable component solely free-radical-polymerizable compounds (a).

32. **(new)**: A method according to claim 31, wherein the free-radical-polymerizable compound comprises at least one compound selected from the group consisting of mono-, di-, tri- or tetra-functional acrylates monomer and mono-, di-, tri- or tetra-functional acrylate-functional oligomers.

33. **(new)**: A method according to claim 2, wherein the composition comprises as polymerizable component solely cationically polymerizable or crosslinkable compounds (b).

34. **(new)**: A method according to claim 2, wherein the composition comprises as polymerizable component a mixture of at least one free-radical-polymerizable compound (a) and at least one cationically polymerizable compound (b).

35. **(new)**: A coated substrate which is coated on at least one surface by means of the method according to claim 2.

36. **(new)**: A coating obtainable by a method according to claim 2.

37. **(new)**: A method of curing a composition comprising

(1) a combination of at least one electron acceptor maleimide compound, and at least one electron donor vinyl ether compound; and

(2) optionally at least one free-radical-polymerizable compound (a),  
wherein the curing is carried out in a plasma discharge chamber.